Math 112
LQuiz 03

2022–01–18 (T)

Your name: _____

Exercise

Consider the piecewise function $f : \mathbf{R} \to \mathbf{R}$ whose rule of assignment is

$$f(x) = \begin{cases} -x^2 & \text{if } x \leqslant 0 \\ x^2 & \text{if } x > 0 \end{cases}$$

(a) (1 pt) Find $\lim_{x \uparrow 0} f(x)$ (i.e. the limit from the left). Justify briefly.

(b) (1 pt) Is f continuous from the left at $x = 0$? Justify briefly.

(c) (1 pt) Find $\lim_{x \downarrow 0} f(x)$ (i.e. the limit from the right). Justify briefly.

(d) (1 pt) Is f continuous from the right at $x = 0$? Justify briefly.